

ABSTRACT

An optical coupler for parallel coupling from a single mode optical fiber, or fiber ribbon, into a silicon-on-insulator (SOI) waveguide for integration with silicon optoelectronic circuits. The optical coupler incorporates the advantages of the vertically tapered waveguides and prism couplers, yet offers the flexibility of planar integration. The optical coupler may be fabricated using wafer polishing technology or grayscale photolithography. The optical coupler can be packaged using epoxy bonding to form a fiber-waveguide parallel coupler or connector.